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EXAMINER

CAVALLARI, DANIEL J

ART UNIT	PAPER NUMBER
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2836

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/628,389

Applicant(s)

YOKOYAMA ET AL.

Examiner

Daniel J. Cavallari

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7,9-11,17,18,20 and 22 is/are rejected.
- 7) ☒ Claim(s) 8,12-16,19,21 and 23-26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/5/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

The examiner acknowledges a submission of the amendment filed on 8/9/2006.

The amendments to the title, specification, abstract, drawings and cancellation of claims 1-6 and newly submitted claims 7-26.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 6/5/2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

The previously made objection to the drawings has been withdrawn in view of the replacement drawings received on 8/9/2006. These new drawings are accepted.

The examiner acknowledges corrections to the specification and therefore some of the previous objections are withdrawn however the specification is still objected to for reasons discussed in detail below.

The previously made claim objections and 112 claim rejections have been withdrawn in view of the cancellation of claims 1-6.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "30" (See amended specification, page 6, paragraph 22) and "31" (See amended specification, page 9, paragraph 27) have both been used to designate "the first power supply line" and "32" and "33" have both been used to designate the second power supply line. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The specification is objected to for the following reasons:

- Reference characters "30" (See amended specification, page 6, paragraph 22) and "31" (See amended specification, page 9, paragraph 27) have both been used to designate "the first power supply line" and "32" and "33" have both been used to designate the second power supply line.

Appropriate action is required.

Claim Objections

Claims 9, 11, & 20 are objected to because of the following informalities:

In regard to Claims 9 & 20

- The phrase "...reversibly changeover"... is awkward and should be reworded to positively recite the claim limitation. The claim will be examined as best understood to mean "...are capable of switching between the..."

In regard to Claims 11 & 22

- The phrase "...when abnormal is detected..." is an incomplete sentence and awkward. The examiner will examine the claim as best understood to mean "...when an abnormal condition is detected..." The phrase "...with the detected abnormal" is also awkward and will be interpreted as "...with the detected abnormal condition".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 9-11, 17, 18, 20 & 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolz et al. (WO 02/066293 A1) and Willmann et al.(5,853,229).

In regard to Claims 7 & 18

Bolz et al. (hereinafter referred to as Bolz) teaches:

- An electric generator for generating an electric power and a braking force accompanied with the electric power generation read on by the integrated starter generator (ISG) (See Figure 4 & Column 1, Lines 30-54).
- An electric storage device (B1) for storing the electric energy generated by the electric generator (See Figure 4 & Column 7, Lines 1-12).
- A first electric power supply line electrically connecting the electric generator (ISG) and the electric power storage device (B1) read on by the top most supply line from the AC/DC converter connecting the DC/DC converter (See Figure 4).
- A second electric power supply line read on the bottom power supply line comprising switches (S2) and (S4) electrically connecting the load (V) to the first power supply line at a first location between the electric generator (ISG) and the first connecting device (S1) and at a second location (located between switches S3 & S4) between the electric power storage device (B1) and the first connecting device (S1).
- A second connecting device (S2) on the second power supply line between the second location (located between switches (S3 & S4) and the load (V).
- A third connecting device (S4) provided on the second supply line between the first location (located between switches S1 & S2) and the load (V).
- An electric power source control device or controlling the first, second and third connecting devices (See Column 8, Lines 9-14).

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Although Bolz teaches a regenerative braking system for a vehicle, Bolz fails to teach the load (V) comprising an electrically driven brake device for generating a braking force by being electrically driven.

Willmann et al. (hereinafter referred to as Willmann) teaches a regenerative braking system further utilizing electrically driven friction brakes (See Column 1, Lines 40-49 & Column 3, Lines 9-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the electrically driven brakes as part of the load (V) of Bolz in addition to the regenerative braking as taught by Willmann. The motivation would have been to provide additional safety with an additional means of braking using friction brakes in addition to having a regenerative braking system (See Column 4, Lines 38-54).

Bolz further teaches:

In regard to Claims 9 & 20

- The first, second, and third connecting devices (S1, S2, & S3) changeover electrical connection and disconnection of respective power supply lines (See Figure 4).

In regard to Claim 10

- An electric power source control device or controlling the first, second and third connecting devices (See Column 8, Lines 9-14).

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In regard to Claims 11 & 22

- When an abnormal condition is detected with the electric power storage device (battery B1 charge required), the power source control device switches the first, second, and third device accordingly with the detected abnormal condition (See Column 8, Line 23 to Column 9, Line 40).

Claims 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bolz et al., Willmann et al., and Shi (US 5,654,859).

Incorporating all arguments above, Bolz teaches electric loads other than electrically driven brake device (V) connected to the first electric power supply line (See Column 6, lines 56-61) however fails to teach power-source connection means connected between the first electrical power supply line and the load and a power-source control device for detecting interruption between the electrically-driven brake device and the first electrical power supply line to control connection of the power-source connection means.

Shi teaches a fault tolerant system which can be utilized in automobiles (See Column 1, Lines 11-20) in which switches and a fault sensor are used to disconnect loads from the power source supply line when a fault occurs (See Column 5, Line 15 to Column 6, line 8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the fault isolation device taught by Shi with the

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power supply system of Bolz in which to isolate the loads from the power supply. The motivation would have been to isolate a fault with load in order to protect the power supply and prevent damage to the system (See Shi, Column 5, Line 65 to Column 6, line 8).

Allowable Subject Matter

Claims 8, 12-16, 19, 21, 23, 25, & 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In regard to Claims 8 & 19

Bolz fails to teach the first, second, and third switches switched independently (See Column 8, Line 49 to Column 9, Line 39) and although prior art teaches vehicle systems incorporating independently switched switches, prior art fails to teach the switch configuration taught by the applicant in which the switches are switched independently of each other.

In regard to Claims 12 & 21

Bolz and Prior art fail to teach the electrical power supply apparatus taught by the applicant in which the first (S1) and second (S2) switch are in electrical conduction when the third switch is disconnected.

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In regard to Claims 13 & 23

Shi teaches a fault tolerant distribution system, including ground fault, (See Column 3, Line 60 to Column 4, Line 12) and Bolz teaches an electrical power supply unit for an automobile however prior art fails to teach the particular switch arrangement in which three switches are switched in a system configured such as that taught by Bolz in which when a ground fault occurs on a first electrical power supply line, the first and third connecting devices are disconnected and the second connecting device is connected to drive a brake device by power from a power storage device.

In regard to Claims 14 & 24

Shi teaches a fault tolerant distribution system, including ground fault, (See Column 3, Line 60 to Column 4, Line 12) and Bolz teaches an electrical power supply unit for an automobile however prior art fails to teach the particular switch arrangement in which three switches are switched in a system configured such as that taught by Bolz in which when a ground fault occurs on the second electrical power supply line, the first and second connecting devices are disconnected and the third connecting device is connected to drive a brake device by power from a power generator.

In regard to Claims 15 & 25

Shi teaches a fault tolerant distribution system, including ground fault, (See Column 3, Line 60 to Column 4, Line 12) and Bolz teaches an electrical power supply unit for an automobile however prior art fails to teach the particular switch arrangement

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in which three switches are switched in a system configured such as that taught by Bolz in which to switch the first, second and third switches in response to the ground fault such that the electric generator charges the power storage device so that braking torque is generated by the electric power generator.

In regard to Claims 16 & 26

Shi teaches a fault tolerant distribution system, including ground fault, (See Column 3, Line 60 to Column 4, Line 12) and Bolz teaches an electrical power supply unit for an automobile however prior art fails to teach the particular switch arrangement in which three switches are switched in a system configured such as that taught by Bolz in which to switch the first, second and third switches in response to the ground fault such that the second and third switch is opened and the first switch and a forth switch is closed allowing the generator to supply power to the load while the generator produces a braking torque.

Conclusion

The examiner notes that US Patent 6,919,648 has been taken to be the English equivalent of Bolz et al. (WO 02/066293 A1) and the US Patent was used and referenced in the rejection in place of the foreign PCT.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Cavallari whose telephone number is (571)272-8541. The examiner can normally be reached on Monday-Friday 8:30-5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Cavallari

October 21, 2006



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SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800